EXHIBIT A
SCOPE OF WORK

BACKGROUND

The Energy Commission is directed by Public Resources Code Section 25301 to prepare a forecast of transportation fuel demand to assess the need for resource additions, efficiency, and conservation with consideration for all aspects of energy industries and markets essential for the state economy, general welfare, public health and safety, energy diversity, and protection of the environment. Public Resources Code Section 25304 specifies that the Energy Commission transportation forecast shall include:

- Assessment of trends in transportation fuels, technologies, and infrastructure supply and demand and the outlook for wholesale and retail prices for petroleum and alternative transportation fuels under current market structures and expected market conditions;
- Forecasts of statewide and regional transportation energy demand, both annual and seasonal, and the factors leading to projected demand growth including, but not limited to, projected population growth, urban development, vehicle miles traveled, the type, class, and efficiency of personal vehicles and commercial fleets, and shifts in transportation modes;
- Evaluation of the sufficiency of transportation fuel supplies, technologies, and infrastructure to meet projected transportation demand growth;
- Evaluation of alternative transportation energy scenarios, in the context of least environmental and economic costs, to examine potential effects of alternative fuels usage, vehicle efficiency improvements, and shifts in transportation modes on public health and safety, the economy, resources, the environment, and energy security; and
- Examination of the success of introduction, prices, and availability of advanced transportation technologies, low- or zero-emission vehicles, and clean-burning transportation fuels, including their potential future contributions to air quality, energy security, and other public interest benefits.

The forecasts and assessments are used in making recommendations to improve the efficiency of transportation energy use, reduce dependence on petroleum fuels, decrease environmental impacts from transportation energy use contribute to congestion reduction, promote economic development, and enhance energy diversity and security.

The Energy Commission prepares the forecast and assessment of transportation fuel demand, the outlook for retail fuel prices, and the analysis of shifts in fuel types, vehicle types, and other factors based on gathered and analyzed data. The Energy Commission uses the California Vehicle Survey (CVS) in particular to assess current vehicle ownership, the factors current and future vehicle owners consider when purchasing a new vehicle, and the likelihood that they would operate an alternative fuel vehicle or other advanced technology vehicle.

GOALS AND OBJECTIVES

The goals of this Agreement are to design and conduct both revealed and stated preference surveys for both the household/residential light duty vehicle (LDV) sector and for the commercial LDV sector for the 2011 CVS, to integrate the 2011 CVS household survey with the 2010 California Household Travel Survey (CHTS) being conducted by the California Department of Transportation (Caltrans), and to estimate vehicle utility functions for the two market segments.

ADMINISTRATIVE TASKS

TASK 1: CONTRACT MANAGEMENT

TASK 1.1 - KICKOFF MEETING

The Contractor shall:

- Attend a "kick-off" meeting with the Energy Commission Contract Manager (CCM), Contracts Officer, the Accounting Office, and others as determined by the CCM. The Contractor shall include their Project Manager, Contract Administrator, and Accounting Officer, and others as agreed upon with the CCM. Both the administrative and technical aspects of this contract will be discussed in the meeting.

TASK 1.2 - INVOICES

The Contractor shall:

- Prepare an invoice for all reimbursable expenses incurred performing work under this contract in compliance with the Terms and Conditions of the contract. Official invoices must be submitted to the Energy Commission's Accounting Office.

TASK 1.3 - INCENTIVE PAYMENTS

The goal of this task is to pay monetary incentives to survey participants at each of the three phases of the 2011 CVS: pre-survey focus group sessions, pre-test, and the main survey.

The Contractor shall:

- Maintain a log of monetary incentive payments, including the distribution and logging of the payments. The log will include, but is not limited to, name of the recipient, incentive payment amount, and the date the payment was issued. Funding for incentives is included in the associated deliverable payment. For example, Task 5 deliverable payments should include all focus group incentive payments.
- Design and distribute monetary incentives at different stages of the survey, as described in Tasks 5 and 6.

TASK 1.4 - SUBCONTRACTORS

In the event Subcontractors are part of the Contractor's proposal, the Contractor shall:

- Manage and coordinate subcontractor activities. The Contractor is responsible for the quality of all subcontractor work and the Energy Commission will assign all work to the Contractor. If the Contractor decides to add new subcontractors, they shall 1) comply with the terms and conditions of the contract, and 2) notify the CCM who will follow the Energy Commission's process for adding or replacing subcontractors.

TASK 1.5 - MONTHLY PROGRESS REPORTS

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of the project.

The Contractor shall:

- Prepare monthly progress reports which summarize all contract activities conducted by the Contractor for the reporting period, including an assessment of the ability to complete the contract within the current budget and any anticipated cost overruns.

- Each progress report is due to the CCM within 15 calendar days after the end of the reporting period.

Deliverables:

- Monthly Progress Reports

TASK 1.6 - FINAL REPORT AND MEETING

The goal of this task is to prepare a comprehensive Final Report and meet to discuss the Final Report for the work done under this contract.

The Final Report shall be a summary of all previous reports plus the Contractor's assessment of actions and methods to improve future CVS's. The Contractor shall meet with the Energy Commission to discuss the draft Final Report prior to finalizing the Final Report. The meeting can be held via conference call, online, or in person. The CCM will review and approve the Final Report. The meeting and Final Report must be completed on or before the termination date of the contract.

The Final Report formatting requirements include illustrations and graphics to be sized to print on 8 ½" by 11" paper and readable if printed in black and white. The Contractor's Reports shall be prepared consistent with the Energy Commission Document Production protocols for Consultant Reports located at:
http://www.energy.ca.gov/contracts/consultant_reports/index.html.

The Final Report shall be a public document. If the Contractor has obtained confidential status from the Energy Commission and will be preparing a confidential version of the Final Report as well, the Contractor shall perform the following subtasks for both the public and confidential versions of the Final Report.

TASK 1.6.1- Final Report Outline

The Contractor shall:

- Prepare a draft outline of the Final Report.
- Submit an electronic draft outline of the Final Report to the CCM for review and approval. The CCM will provide written comments to the Contractor on the draft outline.
- Prepare and submit a final outline to the CCM once agreement has been reached on the draft. The CCM shall provide written approval of the final outline.

Deliverables:

- Draft Outline of the Final Report
- Final Outline of the Final Report

TASK 1.6.2 - Final Report and Meeting

The Contractor shall:

- Prepare the draft Final Report for this contract.
- Submit an electronic draft Final Report to the CCM for review and comment.
- Schedule a meeting with the CCM approximately 15 calendar days after submitting the draft Final Report to the CCM. The purpose of the meeting is to discuss the draft Final Report. The CCM will provide written comments to the Contractor after the meeting has occurred.

- Prepare and submit a Final Report that addresses all of the CCM's comments on the draft Final Report. Any problematic recommended changes should be discussed with the CCM. Once final editing is completed, the CCM shall provide written approval to the Contractor.
- Submit one print ready copy, one electronic copy, and one bound copy of the Final Report with the final invoice.

Deliverables:
- Draft Final Report
- Final Report

TASK 1.7- CONFIDENTIALITY AGREEMENTS

The Contractor shall:
- Enter into a confidentiality agreement with Caltrans for using Caltrans 2010 CHTS data, a confidentiality agreement with the Department of Motor Vehicles (DMV) for using the DMV data, and a non-disclosure agreement with the Energy Commission. The CCM will provide these agreements at the kick off meeting.

Deliverables:
- Signed confidentiality agreement for using Caltrans data
- Signed confidentiality agreement for using DMV data
- Signed non-disclosure agreement with the Energy Commission

TECHNICAL TASKS

TASK 2: WORK PLAN

The goal of this task is to create a clear description of the work to be performed under each task and the associated methods. The Contractor shall finalize a project Work Plan based on the comments on the draft Work Plan submitted in the proposal. This Work Plan will describe the scope of the work and the methodologies to be used for completing the surveys and estimating the equations.

The Contractor shall:
- Meet with the CCM, the Caltrans 2010 CHTS Project Manager, and the Caltrans 2010 CHTS contractor to discuss finalizing the work plan. This strategy meeting to discuss the Work Plan shall take place within ten (10) business days after the Kick-Off Meeting. This strategy meeting will be held either at the Energy Commission, at Caltrans, or on the web.
- Finalize a project Work Plan in consultation with the CCM. The Work Plan shall contain a thorough discussion of the work to be performed. It will document the Energy Commission's and the Contractor's expectations for each task, and serve as a reference throughout the course of the project. The Work Plan shall address:
    - Approach to integrating the 2011 CVS household vehicle survey with the 2010 CHTS travel survey data;
    - Plan to coordinate and cooperate on household survey timeline and data with the Caltrans 2010 CHTS project manager;
    - Sampling design for both household and commercial markets;
    - Survey sample stratification;
    - Approach to survey design;

    - Approach to conducting focus groups;
    - Approach to dealing with non-response bias;
    - Scope of survey instruments;
    - Type(s) of surveys (phone, mail-in, internet, etc.);
    - Approach to representing cell-phone only households;
    - Respondent recruitment procedures;
    - Approach to pre-test survey and sample;
    - Pretest survey procedures;
    - Data collection protocols;
    - Quality control procedures;
    - Logistics of survey execution;
    - Cleansing and coding of collected survey data;
    - Database and software format of delivered survey data
    - Methods of communicating work progress at different stages of the survey;
    - Content outline of the final report;
    - Methods for estimating and validating the vehicle utility models;
    - Statistical software to be used in model estimation; and
    - Project schedule, detailing the tasks and their associated dates and costs.
- Update the Work Plan as necessary throughout the Agreement, in consultation with the CCM.

Deliverables:
- Final Work Plan

TASK 3: SURVEY REVIEW AND DESIGN DEVELOPMENT, WEBSITE, AND DATABASE

The goal of this task is (A) to identify all the data items for inclusion in the 2011 CVS, after careful review of data items in both the 2009 CVS commercial and household vehicle surveys and the data items covered in the 2010 CHTS for the household survey participants, (B) to develop recommendations for updating the 2009 CVS and for integrating the 2010 CHTS household travel survey with the 2011 CVS household vehicle survey, and (C) to develop both website and database management plans.

The 2010 CHTS core survey data will include data on: general economic and demographic information such as household size, geocoded location, income, housing status, employment status, age, gender, household activity, annual, trip day, and trip level VMT per household for work and other purposes. It will also include GPS and OBD data on on-road fuel economy and driving behavior for a subset of the sample. The 2010 CHTS data also includes vehicle ownership data, but the Contractor needs to determine if that data is sufficient for estimating the vehicle utility equations.

<u>The 2011 CVS involves both revealed and stated preferences surveys for both the household and the commercial LDV sectors.</u>

TASK 3.1 - HOUSEHOLD SURVEY

The goals of this task are to review the 2009 CVS household vehicle revealed and stated preferences surveys and the 2010 CHTS household travel survey with respect to survey design, data items, survey instrument and survey time line; to devise a plan for integrating the 2011 CVS household vehicle survey with the 2010 CHTS household travel survey; and to update, and improve upon, the 2009 CVS household vehicle survey and related documents available at the time to formulate recommendation for the 2011 CVS household vehicle survey.

The 2009 CVS household vehicle survey will be the foundation for the 2011 CVS household vehicle survey in this contract. The 2009 CVS household vehicle survey integrates the revealed preferences survey with the stated preferences survey.

Task 3.1.1 - Revealed Preferences Survey

The Contractor shall:

- Review and compare survey methodology, sampling design, data items, and survey instruments of the 2009 CVS revealed preferences vehicle survey and the 2010 CHTS to identify the 2009 CVS revealed preferences household survey data items that are not included in the 2010 CHTS household travel recruitment survey, but are important for estimating the vehicle utility functions for the 2011 CVS. The common data items between the 2010 CHTS household travel and 2009 CVS household vehicle surveys are limited to what is collected in the revealed preferences survey of the household vehicle owners. These missing data items, if determined to be necessary, will be collected through an add-on survey of revealed preferences.
- Formulate recommendations to the CCM on:
    - The need for an add-on revealed preferences/recruitment 2011 CVS household vehicle survey to cover data gaps that exist between CHTS household travel survey data items and the CVS revealed preferences household survey data items. The add-on revealed preferences 2011 CVS household vehicle survey, if determined to be necessary, and the stated preferences survey will be administered according to Tasks 4 through 6.
    - Whether a focus group/pretest survey is necessary for the add-on revealed preferences survey.
- Include household survey reviews and recommendations in the Task 3 Report (see Task 3.4 for details).

Task 3.1.2 - Stated Preferences Survey

The Contractor shall:

- Develop stated preference or choice questions to test the value to respondents of 10-15 vehicle attributes.
- Formulate recommendations to the CCM on the following:
    - The best method to draw sample from the households recruited for completing the 2010 CHTS;
    - The specific vehicle attributes for inclusion in the stated preferences survey instrument for the 2011 CVS; and
    - The best method to update the 2009 CVS household stated preferences vehicle survey and survey instrument design.
- Include household survey reviews and recommendations in the Task 3 Report (see Task 3.4 for details).

TASK 3.2 - COMMERCIAL FLEET SURVEY

The goal of this task is to review the 2009 CVS commercial fleet survey technical reports with respect to survey design and methodologies and the survey instrument to formulate recommendations for updating the 2009 CVS commercial vehicle survey and survey instrument designs. The 2011 CVS commercial fleet survey will be composed of **two** surveys: a recruitment survey of revealed preferences and a stated preferences survey.

Data specific to the commercial vehicle survey includes general economic information such as location, type, and size of business and its fleet.

The Contractor shall:

- Review the 2009 CVS commercial fleet survey technical reports.
- Formulate recommendations to the CCM on:
    - The specific vehicle attributes for inclusion in the stated preferences survey instrument; and
    - The best method to update the 2009 CVS commercial vehicle survey and survey instrument design.
- Include commercial vehicle survey review and recommendations in the Task 3 Report (see Task 3.4 for details).

TASK 3.3 - DATA CATEGORIES APPLICABLE TO BOTH HOUSEHOLD AND COMMERCIAL VEHICLE SURVEYS

The goal of this task is to further clarify data categories that apply to both commercial and household vehicle stated preferences surveys. Data categories that these vehicle surveys have in common are:

- Current vehicle ownership by number, vehicle and fuel types, and vintage of vehicles;
- Vehicle transaction behavior (acquisition, transfer of ownership, and vehicle retirement);
- Annual VMT per vehicle;
- Vehicle attributes used in the stated preferences survey including, but not limited to, vehicle price, miles per gallon, maintenance cost, repair cost, depreciation, range acceleration;
- Response to, and interest in, purchasing new types of vehicles such as, but not limited to hybrid gasoline, natural gas, hybrid diesel, E-85 FFV, and advanced diesel vehicles;
- Response to, and interest in, using alternative fuels such as, but not limited to E-85, electricity, and natural gas;
- Response to, and interest in, vehicle and vehicle use pricing options such as announced regularly scheduled and one time fuel tax increase, per gallon fee for VMT, and "Feebates". A "Feebate" refers to a program where buyers of new cars that are more efficient than average receive a rebate based proportionately on vehicle fuel efficiency or carbon emissions and pay a fee if they purchase vehicles that are less efficient than average; and
- Choice response to hypothetical vehicles with varying attributes such as, fuel type, range, fuel economy, purchase price, and refueling options and availability, refueling time and others.

TASK 3.4 - TASK 3 REPORT

The goal of this task is to prepare a Task 3 Report on the above activities.

The Contractor shall:

- Prepare a draft Task 3 Report for CCM review. The Task 3 Report shall include the following content:
    - Summary review of the 2009 CVS and the 2010 CHTS;
    - Comparison of the 2009 CVS and 2010 CHTS household surveys' data items;
    - Recommendations required in Task 3.1; and
    - Recommendations required in Task 3.2.
- Based on comments from the CCM, prepare a final Task 3 Report.

Deliverables:

- Draft Task 3 Report
- Final Task 3 Report

TASK 3.5 - SURVEY WEBSITE

The goal of this task is to create a website for the 2011 CVS respondents who choose to complete the survey online. The final website design shall require approval by the CCM before its use in the 2011 CVS and must be accessible to the CCM for the duration of the contract.

The Contractor shall:

- Create and maintain a secure and confidential website for all surveys, in both English and Spanish, to allow respondents to complete the surveys via the Internet.
- Develop a description of the website for CCM approval. The description shall include:
  - The website's appearance;
  - How the respondents will log into the website;
  - How the respondents will complete the survey;
  - How the data will be stored; and
  - How the website will be secure and remain confidential
- Develop a mock-up of the website for CCM approval. The mock-up shall be a sketch of how each screen will look for the respondents.
- Provide the URL and screenshots of the website.

Deliverables:

- Description of survey website
- Mock-up of survey website
- URL and screenshots of the survey website

TASK 3.6 - SURVEY DATABASE DEVELOPMENT

The goal of this task is to create a database development plan. For all surveys, respondents shall be offered the choice of completing the survey by mail or via the Contractor's website. If necessary, the Contractor shall contact the survey respondent(s) by telephone, after completion of the survey, to obtain additional information or to modify and correct the collected data. The Contractor will be responsible for entering the responses from all survey modes (mail, phone, and online), into the database.

The Contractor shall:

- Create and maintain a database that stores all responses from the respondents
- Update the database on a weekly basis with survey responses from all survey modes.
- Prepare a database development plan for storing the combined 2010 CHTS and 2011 CVS data

Deliverables:

- Database development plan

TASK 4: SURVEY AND SAMPLE DESIGN

The goal of this task is to complete the survey and sampling designs and survey instruments for the 2011 CVS. Under this task, the Contractor shall develop the 2011 CVS based on acceptable standards in the field, for this type of survey and model, while making use of the relevant data collected for the 2010 CHTS for the 2011 CVS household vehicle survey.

TASK 4.1 - HOUSEHOLD SURVEY

The goal of this task is to develop survey and sampling designs and survey instruments for the 2011 CVS household vehicle survey.

The Contractor shall:

- Obtain the contact information and 2010 CHTS identification numbers for the 2010 CHTS participants from the 2010 CHTS Project Manager to draw the sample for the 2011 CVS household vehicle survey.
- Design the household vehicle survey sample to ensure that:
    - o The sample is a reliable representation of the state, incorporating key demographic variables of interest (e.g., location, household income, household size, number of workers in household, transit rider-ship per capita, and annual VMT).
    - o Distribution of respondents recruited for the 2011 CVS household vehicle survey is based on the population distribution by California counties. Sample distribution of household participants should be close to the regional distribution of households in California. The California Department of Finance's most current population estimates should be used for this survey.
    - o The number of respondents recruited for the 2011 CVS household vehicle survey shall be **sufficient** to **result in** 3,500 completed stated preference household surveys. In the 2009 CVS, almost half of the participants who completed the household revealed preferences survey chose to participate in the stated preferences survey. This can potentially result in approximately 7000 add-on revealed preferences household surveys.
- Design the household survey.
    - o Contractor may use multiple modes for conducting the survey, including phone (landline and/or cell), mail, and internet-based surveys, and may use different modes in different stages of the survey.
    - o Suggest cost effective methods to complete the survey while maintaining the designated quality and quantity of survey data.
    - o Ensure that the 2010 CHTS data is properly integrated with the 2011 CVS household vehicle survey data.
- Develop quality control procedures for key variables that have been used to develop nested multinomial logistic utility equations. Quality includes, but is not limited to, corrections for misinformation from survey respondents, outlying data, and any other data collection and data entry errors. Contractor is responsible for the quality of the 2011 CVS household vehicle survey data that it collects, including data items that fall in data categories listed in 3.4 under Task 3.
    - o For the 2011 CVS household vehicle survey participants, these variables need to integrate geocoding from the 2010 CHTS data, and be delineated by geography such that the county and region of the respondents are included in the data. Other household vehicle attributes that are shown to be significant will be added based on discussions with the CCM.
    - o Some of the variables used in the logistic equations for the household data will rely on the accuracy of the 2010 CHTS data obtained from Caltrans. Contractor is not responsible for the accuracy of the 2010 CHTS data, or for delays caused by the CHTS contractor that are beyond the CVS Contractor's control. Data from the 2010 CHTS include:
        - ▪ Household income range in $10,000 increments;
        - ▪ Household size;
        - ▪ Number of workers in household;
        - ▪ Transit ridership per household member;
        - ▪ Annual VMT estimates for work, daily routines and recreational travel; and
        - ▪ VMT estimates for local and long distance travelers.
- Compose communications to inform all survey respondents that the survey information they provide will be held confidential by the Contractor and the Energy Commission

pursuant to the California Information Practices Act and the signed non-disclosure agreement with the Energy Commission.
- Prepare survey instrument material in both English and Spanish.
- For all survey participants, maintain each respondent's telephone number, address, and e-mail in the event that further clarifications are needed from the respondents or survey responses appear to be internally inconsistent and/or unlikely to be correct.
- Include the sampling and survey designs, and survey instrument(s) for the 2011 CVS household vehicle survey, as well as the methods used for integrating 2011 CVS household vehicle survey and the 2010 CHTS, in the Task 4 Report (see Task 4.3).

TASK 4.2 - COMMERCIAL VEHICLE SURVEY
The goal of this task is to complete survey and sampling designs and survey instruments for the 2011 CVS commercial vehicle survey.

The Contractor shall:
- Design the commercial fleet owner sample to ensure that:
  - The commercial fleet owner sample is representative of the fleet owner population and the industry distribution in the state.
  - The **number of respondents** recruited for the commercial fleet survey shall be sufficient to result in 2,000 completed stated preferences fleet surveys. In the 2009 CVS commercial vehicle survey, the ratio of revealed to stated preferences completed surveys was a little more than two to one. This can potentially result in approximately 4000 completed revealed preferences survey.
- Develop quality control procedures for key variables that have been used to develop nested multinomial logistic utility equations. Quality includes, but is not limited to, corrections for misinformation from survey respondents, outlying data, and any other data collection and data entry errors. The commercial fleet data listed in Tasks 3.3 and 3.4, under Task 3, required for estimation of the commercial vehicle models, will be collected or generated by the Contractor, who must ensure their accuracy.
- Design the survey. The survey design may use multiple modes for conducting the survey, including phone (landline and/or cell), mail, and internet-based surveys, and may use different modes in different stages of the survey. The Contractor shall suggest cost effective methods to complete the survey while maintaining the designated quality and quantity of survey data.
- Compose communications to inform all survey respondents that the survey information they provide will be held confidential by the Contractor and the Energy Commission pursuant to the California Information Practices Act and the signed non-disclosure agreement with the Energy Commission.
- Prepare survey instrument material in both English and Spanish.
- Maintain each respondent's telephone number, address, and e-mail in the event that further clarifications are needed from the respondents or survey responses appear to be internally inconsistent and/or unlikely to be correct.
- Include the sampling and survey designs, and survey instrument(s) for the 2011 CVS commercial vehicle survey in the Task 4 Report (See Task 4.3).

TASK 4.3 - TASK 4 REPORT
The goal of this task is to prepare a Task 4 Report.

The Contractor shall:
- Prepare a draft Task 4 Report for the CCM for review. The Task 4 Report shall include the following content:
  - Survey and sampling designs and survey instruments for the 2011 CVS household vehicle survey;

    - Methods used for integrating the 2011 CVS household vehicle survey and the 2010 CHTS;
    - Survey and sampling designs and survey instruments for the 2011 CVS commercial fleet survey; and
    - Communications prepared for the survey participant recruitment and retrieval for both surveys.
- Incorporate all changes and respond to all comments in a final Task 4 Report to the CCM.

Deliverables:
- Draft Task 4 Report
- Final Task 4 Report

TASK 5: FOCUS GROUP AND SURVEY PRE-TESTS

The goal of this task is to finalize the survey and survey instrument designs. The Contractor shall conduct focus group meetings and pretests to finalize the survey instrument.

TASK 5.1 - FOCUS GROUPS
The goal of this task is to design and execute focus group sessions.

The Contractor shall:
- Design focus group sessions to achieve the following purposes:
    - Compile information to assist with the design of the final survey (for example, ascertain consumers' knowledge of different vehicle technologies).
    - Gather data to assess household and commercial fleet vehicle operator responses to policy measures designed to reduce growth in petroleum dependence.
    - Identify factors that influence consumer behavior in purchasing energy efficient vehicles or vehicles that do not operate on petroleum-based fuels.
    - Identify factors that influence survey responses to public policy initiatives that reduce the demand for petroleum.
- Prepare and submit draft updated material and develop questionnaires for the focus group sessions to the CCM.
- Based on comments from the CCM, prepare final material and questionnaires for the focus group sessions. These materials must be approved by the CCM before being used in the focus group sessions.
- Recruit respondents for focus group sessions, consistent with the Work Plan (Task 2):
    - Ensure that the focus group respondents are owners of a variety of light-duty vehicle and fuel types and are in a variety of income categories;
    - Each focus group session shall consist of 8-10 respondents.
- Conduct focus group sessions:
    - For the commercial fleet owners survey, conduct 3 pre-survey focus group sessions, one in San Francisco, one in Sacramento, and one in Los Angeles. For the household vehicle survey, conduct up to 3 pre-survey focus group sessions in the same cities listed for the commercial focus groups. One focus group session shall be conducted in Spanish and can be composed entirely of the household participants or a combination of household and commercial sector participants.
    - Focus group sessions should last approximately two hours.
    - Rent the facility rental for holding the focus group meeting(s);
    - Provide a facilitator for each focus group session who will:
        - Submit the survey to the respondents,
        - Answer respondent questions,

        - Record the sessions,
        - Perform other necessary tasks to complete the focus group; and
        - Sign a nondisclosure agreement with the Contractor.

    - Videotape the focus groups;
    - Distribute materials to the survey respondents;
    - Attend the focus group session;
    - Notify the respondents that the individual information they provide during the focus group session shall be held confidential by the Contractor and the Energy Commission pursuant to the California Information Practices Act and the non-disclosure agreement between the Contractor and the Energy Commission;
    - Provide the household and commercial respondents with an incentive payment to participate in the focus group sessions;
- Log incentive payments and submitting incentive logs as described in Task 1.3;
- Log responses of the focus group participants in the database
- Submit DVDs of all focus group sessions.
- Prepare a draft Task 5.1 Report for the CCM after conducting the focus group sessions. The Task 5.1 Report shall include:
    - Summary of all pre-survey focus group activities; and
    - Focus group session results, justifications, and recommendations.
- Based on comments from the CCM, prepare a final Task 5.1 Report.

Deliverables:

- Draft focus group materials and questionnaires
- Final focus group materials and questionnaires
- Complete and accurate log of incentive payments
- DVDs of the videotaped focus group sessions
- Draft Task 5.1 Report
- Final Task 5.1 Report

TASK 5.2 - SURVEY PRE-TESTS, INTERVIEWER TRAINING, AND DESIGN OF FINAL SURVEY INSTRUMENTS

The goals of this task are to design and execute the survey pre-test, to train interviewers, and to finalize survey instruments and survey procedures.

The Contractor shall:

- Review both the 2009 CVS household and commercial vehicle surveys and the 2010 CHTS documents to update survey pre-tests. The updates may come from any combination of the 2009 CVS and 2010 CHTS survey instruments, the survey methodology, the results of focus group survey, and any other documentation. The updated survey pre-test will be used to evaluate the draft survey instruments with regard to:
    - Clarity and effectiveness of the instructional cover message;
    - Time required by respondents to complete the questionnaire;
    - Respondent's reactions to the general appearance of the questionnaire (such as page layout, print size, etc.);
    - Ability of respondents to understand questions;
    - Reliability of each question to measure what is intended; and
    - Identify issues regarding placement and wording of sensitive questions.
- Provide a written description of the survey pre-tests to the CCM;
- Provide a final description of recommended pre-tests, based on comments from the CCM;

- Design and provide a concise written description of interviewer training procedures and material;
- Conduct the survey pre-tests:
  - Pre-tests must be conducted with 60 randomly selected households and 30 randomly chosen commercial fleet managers or owners.
  - Pre-tests must be equally distributed between the Sacramento, San Francisco Bay Area, and Los Angeles regions.
- Distribute incentive payment for participating in the survey pre-test; and
- Log incentive payments and submit incentive logs as described in Task 1.3.
- Use the results of the pre-tests to design the final survey instruments, material, and procedures;
- After conducting the pre-tests, prepare a draft Task 5.2 Report for the CCM. The Task 5.2 report shall include:
  - Written description of the survey pre-tests; and
  - Results of the survey pre-tests.
- Based on comments from the CCM, prepare a final Task 5.2 Report.
- Submit the final survey instruments and other materials as requested by the CCM. The survey instrument and material must be written at the sixth grade comprehension level.

Deliverables:

- Draft description of the survey pre-tests
- Final description of the survey pre-tests
- Description of interviewer training procedures and materials
- Complete and accurate log of incentive payments
- Draft Task 5.2 Report
- Final Task 5.2 Report
- Final survey instruments and other material

TASK 6: SURVEY RECRUITMENT, IMPLEMENTATION, RESPONSE CATEGORIES, AND DATA CORRECTION

The goal of this task is to execute the main survey, compile and document the survey data, and analyze survey data quality during data collection. The Contractor shall update the draft recruitment letter from the 2009 CVS, recruit respondents, conduct the surveys, and categorize survey responses, including those responses that do not fit within predefined categories.

The survey data are critical to the Energy Commission's modeling and analysis activities. <u>A high standard of data collection and survey response classification is expected from the Contractor</u>.

The Contractor shall:

- Update the draft recruitment letter from the 2009 CVS, based on the 2010 CHTS recruitment and survey material. The recruitment letter shall notify respondents that the individual information they provide while taking part in the survey shall be held confidential by the Energy Commission and the Contractor pursuant to the California Information Practices Act and the non-disclosure agreement between the Contractor and the Energy Commission.
- Based on comments from the CCM, prepare a final respondent recruitment letters for each survey.
- Conduct the 2011 CVS. During the survey, Contractor will:
  - Compile respondent responses,

- Categorize the response data. The survey data shall include each respondent's residence telephone number(s) and, when possible, workplace telephone number(s).
  - Document and distribute all incentive payments to all participants of the survey;
  - Log incentive payments and submit a log of all incentive payments, as described in Task 1.3
- Describe the recommended validation methodology for both vehicle and VMT models and work with the CCM to finalize the validation process.
- Prepare brief weekly survey implementation progress reports on recruitment and initial survey validity as the survey is in progress. These progress reports can be communicated via e-mail or posted on the Contractor's project management portal. The weekly survey implementation progress reports should include:
  - Discussion of the current sample, describing the distribution of the parameters;
  - Where shortfalls exist (for example, not enough people sampled in a certain age range);
  - Discussion of how to fix this shortfall, if necessary; and
  - How any shortfall affects the survey results.
- Collect a sufficient number of sample data to ensure that valid income responses are present for at least 80 percent of the households, preferably many more;
- Verify the survey data to ensure that information regarding vehicle ownership, transactions, and usage are accurate and complete;
- Provide Zip code plus 4 for each survey respondent, and include the geocoded location for the household vehicle survey participants;
- Create and submit draft commercial fleet survey data files in electronic format, using Excel or a comma-delimited text file, or as otherwise agreed upon between the Contractor and the CCM.
- Incorporating any revisions to the draft survey data files, as indicated by the CCM, deliver final survey data files in electronic format;
- Integrate the 2010 CHTS data with the 2011 CVS data files for the household data and submit draft integrated data files to the CCM.
- Incorporating any revisions to the draft integrated data files, as indicated by the CCM, deliver final integrated data files in electronic format;
- Correct data entry or survey data errors in the resulting data files, as necessary
- Prepare a draft Task 6 Report for the CCM. The Task 6 Report shall include:
  - Respondent recruitment letters for the 2011 CVS for both the household and the commercial surveys;
  - Limitations of survey and survey data; and
  - Documentation of data coding procedures used to categorize survey responses.
- Based on any revisions to the draft Task 6 Report as indicated by the CCM, prepare a final Task 6 Report.

Note that the Energy Commission shall have the sole authority to release survey material, survey results, videotapes, and other materials produced from this survey to outside parties.

Deliverables:

- Draft Recruitment Letters
- Final Recruitment Letters
- Survey participation incentive payment log
- Weekly survey implementation progress reports
- Integrated household survey data files
- Commercial fleet survey data files

- Draft Task 6 Report
- Final Task 6 Report

TASK 7: ANALYSIS OF DATA QUALITY AND SURVEY RESULTS

The goal of this task is to analyze and assure the quality of the survey data and to complete a descriptive analysis of survey results. Under this task, the Contractor shall analyze and document the quality and content of the survey data, both during and after the data collection tasks. The reporting of response or completion rates shall conform to the standards established by the Council of American Survey Research Organizations.

The Contractor shall:

- During data collection, prepare detailed statistical summaries of participation rates and similar indicators of quality and consistency, including:
    - Misreading of the questions to the survey respondents;
    - Misinterpretation of collected data;
    - Other errors in transporting the data into the electronic format; and
    - Any inconsistencies in how the survey questions were asked.
- After the data collection is complete, prepare summary statistics for each sample, including:
    - Number of contacts, participation rates, respondents who did not answer all questions fully, number of outliers (if any), size of individual outliers (if any), and any biased survey respondents or surveyors;
    - Any abnormal variances in the data and any noticeable patterns that suggest the possibility of erroneous data that would need to be investigated further;
    - Completed responses in each cell of the sampling stratification and completed response rates by question, cross-tabulated; and
    - Any other descriptors or question responses which deviate more than a reasonable rate from what would be expected.
- Prepare a draft Task 7 Report. The Task 7 Report shall include the following content:
    - Documentation of the statistical analyses performed and a detailed summary of the results from these analyses; and
    - Descriptive analysis of the data with cross tabulations of different data items by key variables and as requested by the CCM.
- Based on any revisions to the draft Task 7 Report indicated by the CCM, prepare a final Task 7 Report.

Deliverables:

- Draft Task 7 Report
- Final Task 7 Report

TASK 8: LOGISTIC REGRESSION ANALYSIS

The goal of this task is to use the survey data and econometric methods to estimate the utility functions that are integrated to create the personal and commercial vehicle ownership, transaction, and choice models.

The Contractor shall:

- Use the 2011 CVS data from the previous tasks to develop nested multinomial logistic models for consumer utility for the household and commercial light duty vehicle sectors. The nested multinomial logistic functions will be used to develop forecasts of annual

VMT for household and commercial fleet vehicles, vehicle stock, fuel consumption, and fleet characteristics.

- Estimate nested multinomial logistic equations for light duty vehicle ownership, transaction and choice utility functions based on the combined travel and vehicle survey data for the households by ownership categories (1 vehicle, 2 vehicles, and 3+ vehicles) as well as vehicle choice models for the commercial sector by industry grouping. Utility functions estimating preferences for a specific class of vehicles will use stated preferences survey data; other equations will use revealed preferences survey data or a combination of stated and revealed preferences survey data. These equations must include:
    - Utility functions for the number of vehicles per household;
    - Household utility function for new and used vehicles;
    - Utility functions to reflect preferences a specific class of vehicles, for one-vehicle households;
    - Utility functions to reflect preferences a specific class of vehicles, for two-vehicle households;
    - Utility functions to reflect preferences a specific class of vehicles, for 3+ vehicle households;
    - Utility functions to reflect preferences a specific class of vehicles, for commercial fleet owners, in different industry groups;
    - Utility functions for the number of vehicles per commercial fleet;
    - Vehicle Miles Traveled (VMT) equations for different household groups; and
    - VMT equation for commercial fleet vehicle.

  The explanatory variables of these equations include, but are not limited to:
    - Household income;
    - Household size;
    - Gender and age of the decision maker;
    - Business characteristics for commercial fleets;
    - Number of workers in household ;
    - Transit ridership per household member;
    - Fuel type and fuel cost;
    - Fuel availability and refueling time;
    - Maintenance cost and depreciation;
    - Vehicle type and vehicle price;
    - Annual VMT estimates for both households and commercial fleet vehicles;
    - Fuel efficiency, in miles per gallon; and
    - Range and Acceleration (time for vehicle to accelerate from 0 to 60 miles per hour).
- Provide the latest census counts from the United States Census Bureau of household size, income, and number of workers for each region in the state. United States Census Bureau statistics are required to develop appropriate weighting terms for household characteristics.
- Include as-needed additional census data that may be shown to be statistically significant during the development of the utility functions.
- Submit the data sets used in estimating the logistic equations, if they are different from the data files submitted in Task 6.
- Prepare a draft Task 8 Report for review and approval by the CCM. The Task 8 Report shall include:
    - Estimation methods, statistical properties, and validity of the coefficients;
    - Vehicle transaction and choice utility functions, and their nesting structure explicit or implied income, vehicle and fuel price elasticities;
    - Detailed error analysis and verification of independent and identically distributed (IID) error results;

    - Discussion of model validation;
    - Presentation and Comparison of the estimates derived from the utility equations with the most recent Bureau of Transportation Statistics, California Transportation Profile http://www.bts.gov/publications/state_transportation_statistics/state_transportation_statistics_2009/index.html; and
    - A table of relevant census data, from the most recent Bureau of Transportation Statistics, California Transportation Profile (see above link), including, but not limited to, household size, fuel cost, business type, business size, depreciation, income, and number of workers per household and commercial fleet for each region.
- Respond to CCM comments and suggestions, and complete a final Task 8 Report.
- Submit a computer output for the equations from the Task 8 Report.

Deliverables:
- Data files used in estimating the equations, if different from Task 6
- Draft Task 8 Report
- Final Task 8 Report
- Computer output for the equations specified in Task 8 Report

DELIVERABLES AND DUE DATES

TASK	DELIVERABLE	DUE DATE
1. CONTRACT MANAGEMENT		
1.5	Monthly Progress Reports	The 15th of each month
1.6.1	Draft Outline of the Final Report	January 16 2013
	Final Outline of the Final Report	January 30 2013
1.6.2	Draft Final Report	February 15 2013
	Final Report	March 15 2013
1.7	Signed confidentiality agreement for using Caltrans data Signed confidentiality agreement for using DMV data Signed non-disclosure agreement with the Energy Commission	July 30 2011
2. WORK PLAN		
	Final Work Plan	August 15 2011
3. SURVEY REVIEW & DESIGN DEVELOPMENT, WEBSITE, AND DATABASE		
	Draft Task 3 Report	September 15 2011
	Final Task 3 Report	September 30 2011
	Description and mock-up of survey website, URL, and screenshots of the survey website	September 30 2011
	Database development plan	September 30 2011
4. SURVEY AND SAMPLE DESIGN		
	Draft Task 4 Report	October 15 2011
	Final Task 4 Report	October 30 2011
5. FOCUS GROUPS AND SURVEY PRE-TESTS		
5.1	Draft focus group materials and questionnaires	November 15 2011
	Final focus group materials and questionnaires	November 30 2011
	Complete and accurate log of incentive payments	December 30 2011
	DVDs of the videotaped focus group sessions	December 30 2011
	Draft Task 5.1 Report	December 30 2011
	Final Task 5.1 Report	December 30 2011
5.2	Draft description of the survey pretests	December 15 2011
	Final description of the survey pretests	December 30 2011
	Description of interviewer training procedures and materials	December 15 2011
	Complete and accurate log of incentive payments	January 15 2012
	Draft Task 5.2 Report	January 15 2012
	Final Task 5.2 Report	January 30 2012
	Final survey instruments and other material	January 30 2012
6. SURVEY RECRUITMENT, IMPLEMENTATION, RESPONSE CATEGORIES AND DATA CORRECTION		
	Draft Recruitment Letters	January 15 2012
	Final Recruitment Letters	January 15 2012
	Survey participation incentive payment log	November 1 2012

	Weekly survey implementation progress reports	Weekly from the beginning to the end of task 6
	Integrated household survey data files	November 30 2012
	Commercial fleet survey data files	November 1 2012
	Draft Task 6 Report	November 15 2012
	Final Task 6 Report	November 30 2012
7. ANALYSIS OF DATA QUALITY AND SURVEY RESULTS		
	Draft Task 7 Report	January 15 2013
	Final Task 7 Report	January 30 2013
8. LOGISTIC REGRESSION ANALYSIS		
	Data files used in estimating the equations	February 15 2013
	Draft Task 8 Report	February 15 2013
	Final Task 8 Report	February 28 2013
	Computer output for the equations specified in Task 8 Report	February 28 2013